

1. Work requester fills out this section.

☐ Standing Work Permit

Requester: Don Lynch	Date: 8/24/2009	Ext.: 2253	Dept/Div/Group: PO/PHENIX
Other Contact person (if different from requester): Carter Biggs			7515
Work Control Coordinator: Don Lynch		Start Date: 8/25/2009	Est. End Date: 9/1/2009
Brief Description of Work: Remove West half of HBD detector from CM region of IR and prep to send to Stony Brook for repairs.			
Building: 1008	Room: IR	Equipment: HBD	Service Provider: PHENIX techs

WCC, Requester/Designee, Service Provider, and ES&H (as necessary) fill out this section or attach analysis

ES&H ANALYSIS				
Radiation Concerns		<input type="checkbox"/> None <input checked="" type="checkbox"/> Activation	<input type="checkbox"/> Airborne	<input type="checkbox"/> Contamination <input type="checkbox"/> Radiation
Radiation Generating Devices:		<input type="checkbox"/> Radiography <input type="checkbox"/> Moisture Density Gauges	<input type="checkbox"/> Soil Density Gauges	<input type="checkbox"/> X-ray Equipment
<input type="checkbox"/> Special nuclear materials involved, notify Isotope Special Materials Group			<input type="checkbox"/> Fissionable materials involved, notify Laboratory Criticality Officer	
Safety Concerns		<input checked="" type="checkbox"/> None	<input type="checkbox"/> Ergonomics	<input type="checkbox"/> Transport of Haz/Rad Material
<input type="checkbox"/> Adding/Removing Walls or Roofs	<input type="checkbox"/> Confined Space*	<input type="checkbox"/> Explosives	<input type="checkbox"/> Lead*	<input type="checkbox"/> Penetrating Fire Walls
<input type="checkbox"/> Asbestos*	<input type="checkbox"/> Corrosive	<input type="checkbox"/> Flammable	<input type="checkbox"/> Magnetic Field*	<input type="checkbox"/> Pressurized Systems
<input type="checkbox"/> Beryllium*	<input type="checkbox"/> Cryogenic	<input type="checkbox"/> Fumes/Mist/Dust*	<input type="checkbox"/> Material Handling	<input type="checkbox"/> Rigging/Critical Lift
<input type="checkbox"/> Biohazard*	<input type="checkbox"/> Electrical	<input type="checkbox"/> Heat/Cold Stress	<input type="checkbox"/> Noise*	<input type="checkbox"/> Toxic Materials*
<input type="checkbox"/> Chemicals*	<input type="checkbox"/> Elevated Work*	<input type="checkbox"/> Hydraulic	<input type="checkbox"/> Non-ionizing Radiation*	<input type="checkbox"/> Vacuum
<input type="checkbox"/> Excavation	<input type="checkbox"/> Lasers*	<input type="checkbox"/> Oxygen Deficiency*	<input checked="" type="checkbox"/> Other Using Crane w Flam. Gas in IR	
* Does this work require medical clearance or surveillance from the Occupational Medicine Clinic? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Environmental Concerns		<input checked="" type="checkbox"/> None	<input type="checkbox"/> Work impacts Environmental Permit No.	
<input type="checkbox"/> Atmospheric Discharges (rad/non-rad)	<input type="checkbox"/> Land Use	<input type="checkbox"/> Soil Activation/contamination	<input type="checkbox"/> Waste-Mixed	
<input type="checkbox"/> Chemical or Rad Material Storage or Use	<input type="checkbox"/> Liquid Discharges	<input type="checkbox"/> Waste-Clean	<input type="checkbox"/> Waste-Radioactive	
<input type="checkbox"/> Cesspools (UIC)	<input type="checkbox"/> Oil/PCB Management	<input type="checkbox"/> Waste-Hazardous	<input type="checkbox"/> Waste-Regulated Medical	
<input type="checkbox"/> High water/power consumption	<input type="checkbox"/> Spill potential	<input type="checkbox"/> Waste-Industrial	<input type="checkbox"/> Underground Duct/Piping	
Waste disposition by:		<input type="checkbox"/> Other		
Pollution Prevention (P2)/Waste Minimization Opportunity:		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes		
FACILITY CONCERNS		<input checked="" type="checkbox"/> None		
<input type="checkbox"/> Access/Egress Limitations	<input type="checkbox"/> Electrical Noise	<input type="checkbox"/> Potential to Cause a False Alarm	<input type="checkbox"/> Vibrations	
<input type="checkbox"/> Configuration Control	<input type="checkbox"/> Impacts Facility Use Agreement	<input type="checkbox"/> Temperature Change	<input type="checkbox"/> Other	
<input type="checkbox"/> Maintenance Work on Ventilation Systems	<input type="checkbox"/> Utility Interruptions			
WORK CONTROLS				
Work Practices				
<input type="checkbox"/> None	<input type="checkbox"/> Exhaust Ventilation	<input type="checkbox"/> Lockout/Tagout	<input type="checkbox"/> Spill Containment	<input type="checkbox"/> Security (see Instruction Sheet)
<input checked="" type="checkbox"/> Back-up Person/Watch	<input type="checkbox"/> HP Coverage	<input type="checkbox"/> Posting/Warning Signs	<input type="checkbox"/> Time Limitation	<input type="checkbox"/> Other
<input type="checkbox"/> Barricades	<input type="checkbox"/> IH Survey	<input type="checkbox"/> Scaffolding-requires inspection	<input type="checkbox"/> Warning Alarm (i.e. "high level")	
Protective Equipment				
<input type="checkbox"/> None	<input type="checkbox"/> Ear Plugs	<input type="checkbox"/> Gloves	<input type="checkbox"/> Lab Coat	<input type="checkbox"/> Safety Glasses
<input type="checkbox"/> Coveralls	<input type="checkbox"/> Ear Muffs	<input type="checkbox"/> Goggles	<input type="checkbox"/> Respirator	<input type="checkbox"/> Safety Harness
<input type="checkbox"/> Disposable Clothing	<input type="checkbox"/> Face Shield	<input checked="" type="checkbox"/> Hard Hat	<input type="checkbox"/> Shoe Covers	<input checked="" type="checkbox"/> Safety Shoes <input type="checkbox"/> Other
Permits Required (Permits must be valid when job is scheduled.)				
<input checked="" type="checkbox"/> None	<input type="checkbox"/> Cutting/Welding	<input type="checkbox"/> Impair Fire Protection Systems		
<input type="checkbox"/> Concrete/Masonry Penetration	<input type="checkbox"/> Digging/Core Drilling	<input type="checkbox"/> Rad Work Permit-RWP No		
<input type="checkbox"/> Confined Space Entry	<input type="checkbox"/> Electrical Working Hot	<input type="checkbox"/> Other		
Dosimetry/Monitoring				
<input checked="" type="checkbox"/> None	<input type="checkbox"/> Heat Stress Monitor	<input type="checkbox"/> Real Time Monitor	<input type="checkbox"/> TLD	
<input type="checkbox"/> Air Effluent	<input type="checkbox"/> Noise Survey/Dosimeter	<input type="checkbox"/> Self-reading Pencil Dosimeter	<input type="checkbox"/> Waste Characterization	
<input type="checkbox"/> Ground Water	<input type="checkbox"/> O ₂ /Combustible Gas	<input type="checkbox"/> Self-reading Digital Dosimeter	<input type="checkbox"/> Other	
<input type="checkbox"/> Liquid Effluent	<input type="checkbox"/> Passive Vapor Monitor	<input type="checkbox"/> Sorbent Tube/Filter Pump		
Training Requirements (List below specific training requirements)				
Crane Operator, CA –Collider User, PHENIX Awareness				
Based on analysis above, the Walkdown Team determines the risk, complexity, and coordination ratings below:			If using the permit when all hazard ratings are low, only the following need to sign: (Although allowed, there is no need to use back of form)	
ES&H Risk Level:	<input checked="" type="checkbox"/> Low <input type="checkbox"/> Moderate <input type="checkbox"/> High	WCC: _____ Date: _____		
Complexity Level:	<input checked="" type="checkbox"/> Low <input type="checkbox"/> Moderate <input type="checkbox"/> High	Service Provider: _____ Date: _____		
Work Coordination:	<input checked="" type="checkbox"/> Low <input type="checkbox"/> Moderate <input type="checkbox"/> High	Authorization to start _____ Date: _____		
(Departmental Sup/WCC/Designee)				

3. Both work requester and service provider contribute to work plan (use attachments for detailed plans)

Work Plan (procedures, timing, equipment, and personnel availability need to be addressed): See Attached Removal procedure				
Special Working Conditions Required: None				
Operational Limits Imposed: .				
Post Work Testing Required: No				
Job Safety Analysis Required: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			Walkdown Required: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Reviewed by: Primary Reviewer will determine the size of the review team and the other signatures required based on hazards and job complexity. Primary Reviewer signature means that the hazards and risks that could impact ES&H have been identified and will be controlled according to BNL requirements.				
Title	Name (print)	Signature	Life #	Date
Primary Reviewer				
ES&H Professional				
Other				
Other C. Pearson				
Work Control Coordinator	Don Lynch		20146	8/25/2009
Service Provider				
		Review Done: <input type="checkbox"/> in series <input type="checkbox"/> team		

4. Job site personnel fill out this section.

Note: Signature indicates personnel performing work have read and understand the hazards and permit requirements (including any attachments).			
Job Supervisor:		Contractor Supervisor:	
Workers:	Life#:	Workers :	Life#:
Workers are encouraged to provide feedback on ES&H concerns or on ideas for improved job work flow. Use feedback form or space below.			

5. Departmental Job Supervisor, Work Control Coordinator/Designee

Conditions are appropriate to start work: (Permit has been reviewed, work controls are in place and site is ready for job.)			
Name:	Signature:	Life#:	Date:

6. Departmental Job Supervisor, Work Requester/Designee determines if Post Job Review is required. ☐ Yes ☐ No

Post Job Review (Fill in names of reviewers)			
Name:	Signature:	Life#:	Date:
Name:	Signature:	Life#:	Date:

7. Worker provides feedback.

Worker Feedback (use attached sheets as necessary) a) WCM/WCC: Is any feedback required? <input type="checkbox"/> Yes <input type="checkbox"/> No b) Workers: Are there better methods or safer ways to perform this job in the future? <input type="checkbox"/> Yes <input type="checkbox"/> No	
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8. Closeout: Work Control Coordinator (authorizing dept.) checks quality of completed permit and ensures the work site is left in an acceptable condition. (WCC can delegate clean up of work area to work supervisor)

Name:	Signature:	Life#:	Date:

HBD West removal for troubleshooting, repairs and improvements

INTRODUCTION

The recently installed HBD detector subsystem currently operating within the PHENIX experiment has experienced technical problems that require repairs and design improvements to assure optimum performance in the next RHIC run (run 10). The technical problems are mostly in the east half of the detector and it is that detector half which is to be uninstalled and returned to the SUNY Stony Brook Physics department clean room for repairs.

HBD experts have determined that the HBD physics during run 10 would be inadequate if the east half of the detector were left in its current state, and PHENIX management has approved the repair efforts to be undertaken.

This work permit covers only the removal of the HBD from its installed location at PHENIX. Transportation from PHENIX to elsewhere on the BNL site for source removal and transportation from there to SUNY Stony Brook are the responsibility of HBD experts and beyond the scope of this work permit.

HBD West Removal Procedure

Note: HBD experts are responsible for obtaining, preparing and executing appropriate paperwork, permits, safety sign-offs etc. to allow delivery of the HBD East detector to Stony Brook University where the actual repairs will be undertaken.

1. In general, during the summer shutdown all PHENIX magnets will be ramped down and locked out. Verify that this is so.
2. Make sure HBD HV shall be turned off.
3. PHENIX techs shall disconnect all HV, LV and signal cables from the east detector and restrain the loose cable ends within the HBD east cable trays using appropriate cable ties or equivalent.
4. After all cables have been removed, PHENIX gas system technicians shall close the 3-way valves on the supply and return lines to isolate and temporarily seal the east detector.
5. Flexible supply and gas return lines shall then be positioned out of the way of east detector removal and restrained.

6. The HBD east upper and lower mounting brackets shall then be disconnected from the upper and lower support rails and the detector shall be carefully lowered (by hand) to the CM lift platform by 2 PHENIX mechanical technicians.
- 7 The HBD East module shall then be transferred by hand between PHENIX technicians stationed half way up the CM access stairs and at PHENIX track level. Technicians stationed on the CM access stairs shall maintain 3 point contact with the access stairs while handling the HBD east half detector.
8. The assembly shall be carried by hand to the east end of the AH area where it will be held for Health Physics scan.
9. BNL Health Physics shall be summoned to scan the east detector for potential activation. The HBD east half detector shall remain in the PHENIX AH until released by BNL Health Physics.
10. The HBD experts shall then take charge of the HBD east half detector for its journey away from PHENIX to be repaired.